REMARKS

By the present Amendment, typographical errors have been corrected in the specification and the claims have been amended to define certain aspects of the present invention with greater precision. In particular, claim 1 has been amended to recite a surface protecting adhesive film for a semiconductor wafer comprising a base film which comprises at least one layer of a synthetic resin wherein the base film has a storage elastic modulus (E') at 25°C of from $1x10^8$ to $1x10^{10}$ Pa and wherein the base film has a thickness of 10 μm to 120 μm. The surface protecting adhesive film further comprises an adhesive layer of 5 to 50 μm in thickness formed on one surface of the base film wherein the adhesive layer comprises 100 weight parts of a polymer (A) having a functional group capable of reacting with a cross-linking agent and a temperature (Ta) in a range of from -50°C to 5°C at which tan δ of a dynamic viscoelasticity of the polymer(A) is maximized, from 10 weight parts to 100 weight parts of a polymer (B) having a functional group capable of reacting with a cross-linking agent and a temperature (Tb) in a range of from more than 5°C to 50°C at which tan δ of a dynamic viscoelasticity of the polymer(B) is maximized, and from 0.1 weight part to 10 weight parts of a cross-linking agent (C) having two or more cross-linkable functional groups in a molecule based on 100 weight parts of total amount of the polymers (A) and (B). Claims 2, 3, 4 and 7 have been canceled without prejudice or disclaimer in light of the amendments to claim 1.

By following the teachings of the present invention, one can obtain a surface-protecting adhesive film for a semiconductor wafer that can adhere closely to the unevenness of the surface of the wafer and prevent contamination and breakage due to penetration of grinding water on the wafer surface. In addition, upon

completion of the grinding procedure, the adhesive film can be peeled from the wafers without wafer breakage and without adhesive residue. The advantages which can be obtained in accordance with the present invention are illustrated in the results provided in Table 1 on page 45 of the specification. In contrast, when the conditions of the present invention are not followed, substantially inferior results can occur as illustrated by the Comparative Examples provided in Table 2 on page 46. For instance, when the quantity of polymer (B) is lower than the amount defined in claim 1, contamination occurs while when the quantity of polymer (B) is greater than the amount defined in claim 1, wafers are broken and a high level of contamination occurs (see Comparative Examples 1 and 2, respectively). Comparative Example 6 demonstrates that when the temperature at which tan δ is maximized is higher than the defined range for polymer (B), similar inferior results occur. Comparative Example 3 illustrates the importance of the thickness of the adhesive layer while Comparative Examples 4 and 5 demonstrate the importance of the defined amount of crosslinking agent. Comparative Examples 7 and 8 show the adverse consequences of omitting polymer (B) and polymer (A), respectively.

In light of the amendments to claim 1, applicants respectfully submit that the rejection under 35 U.S.C. § 112, second paragraph, is no longer applicable since it is clear that the surface protecting adhesive film comprises the defined base film and the defined adhesive layer. Turning to the rejections on prior art grounds, applicants first submit that claim 1 cannot be rejected as being anticipated by or obvious over Mizutani et al., JP 9-0255933. Mizutani et al. discloses a sheet-like adhesive material which is suitable for fixing electronic parts particularly those involving a semi-conductor. The binder includes (A) a biphenyl epoxy resin of formula (I), (B) a

thermoplastic resin which has a temperature of 50°C or less at which tan δ of a dynamic viscoelasticity is maximized, and (C) a thermoplastic resin which has a temperature of 150°C or more at which tan δ of a dynamic viscoelasticity is maximized.

Mizutani et al. does not anticipate or render obvious any of the claims of record. As explained above, each of the recited features of the defined surface protecting adhesive film is important in providing the illustrated advantageous characteristics. Mizutani et al. does not provide claimed polymer (B) with a tan δ of 5°C to 50°C. Instead, the document describes a thermoplastic resin which has a tan δ of 150°C or more which is far outside of the defined range. Thus, there can be no anticipation and when one considers the aforementioned results of Comparative Example 6 in which tan δ is only 58°C and yet provides substantially inferior results with respect to breakage of wafers and contamination, it will be apparent to those of ordinary skill in the art that Mizutani et al. cannot be used in any way to reject the presently claimed invention.

Bell et al., U.S. Published Patent Application No. 2005/0158475, describes films coated with an anchor layer and optionally provided with a metallized layer and/or adhesive coat. The anchor coating comprises a polymer comprising (a) an optionally substituted α,β-carboxylic acid optionally of high acid value with the polymer preferably having a low glass transition temperature; (b) a polymer comprising an optionally substituted α,β- carboxylic acid optionally of a low acid value and preferably having a high glass transition temperature; and (c) a cross-linker which cross-links the coating composition and increases the glass transition temperature thereof. On page 4 of the Action, the Examiner has referred to

paragraph [0111] which describes Ucecryl H which is said to have a glass transition temperature in the region of 105°C.

From the description provided in Bell et al., it is evident that the publication does not in anyway relate to a surface protecting adhesive film for a semiconductor wafer and therefore the disclosed material is not designed to have characteristics important for this function which are illustrated in Table 1 of the present application. With respect to the specific features recited in claim 1, Bell et al. does not disclose the claimed storage elastic modulus of the base film and, with regard to the components of the anchor coating, the publication fails to appreciate the specific components recited in the claim. The Ucrecyl H disclosed in the publication and referred to by the Examiner in the Action has a glass transition temperature of 105°C and accordingly exhibits a tan δ temperature far outside the claimed range for polymer (B) of 5 to 50°C. When one again considers the results provided in Comparative Example 6 of the present application, those of ordinary skill in the art will recognize that Bell et al. also falls far short from being sufficient to reject any of the claims of record.

The Examiner has next relied on the combination of Overbeek et al., U.S. Published Application No. 2003/0055171 optionally in view of Bell et al. Overbeek et al. describes a polymer compound which is suitable for coating wooden substrates, plastics, paper, leather and metal substrates (see paragraph [0122]). A polymer compound is formed as an aqueous dispersion and is a combination of an acrylic polymer A having a glass transition temperature of not more than 30°C and an acrylic polymer B having a glass transition temperature of at least 35°C and a self-dispersible, ionically stabilized polymer having olefinically unsaturated bond

functionality capable of imparting radiation-curability. The Examiner has referred to the examples starting on paragraphs [0172] and [0173] which includes an acrylic polymer having a glass transition temperature of 85°C in paragraph [0174].

Overbeek et al. does not relate to a surface protecting adhesive film for a semi-conductor wafer and, similar to the discussion provided above, does not recognize the important characteristics which are necessary to perform this function. Moreover, by following the teachings of the publication, and particularly the Example referred to by the Examiner, those of ordinary skill in the art would be led to a material which does not have the claimed polymer (B) with the defined tan δ temperature of 5 to 50°C. Indeed, one would be led to a polymer having a much higher tan δ temperature and this understanding would be confirmed by reliance on Bell et al. which describes the presence of a polymer having a glass transition temperature of 105°C. In this latter regard, the Examiner is well aware of the principle that one cannot pick and chose from amongst the various aspects of a document in an attempt to support a rejection and that one must consider all the teachings of a reference including those which would lead those of ordinary skill in the art away from the invention.

The final rejection set forth in the Action, namely based on Miyakawa et al., JP 11-315259, also falls short from being sufficient to justify a rejection of the claims. While Miyakawa et al. does relate to a surface protecting adhesive film for a semiconductor wafer, the document does not teach the specific adhesive layer recited in claim 1. More particularly, claim 1 recites 100 parts by weight of defined polymer (A), 10 to 100 parts by weight of defined polymer (B) and 0.1 to 10 parts by weight of the cross-linking agent based on 100 parts by weight of the total amount of

polymers (A) and (B). In contrast, Miyakawa et al. describes 100 parts by weight of an acrylic acid alkyl ester polymer, 1.5 to 15 parts by weight of a cross-linker, and 5-20 parts by weight of an alkaline glycolic polymer having a predetermined molecular weight based on 100 parts by weight of the total amount of the acrylic acid alkyl ester polymer and the cross-linker. In other words, while the presently-claimed invention typically has a predominant amount of polymer A, the reverse is true in Miyakawa et al. and, the importance of this feature of applicants' invention is illustrated by reference to Comparative Example 2 of aforementioned Table 2 of the present application. Therefore, Miyakawa et al. also falls short from being sufficient to reject any of the claims of record.

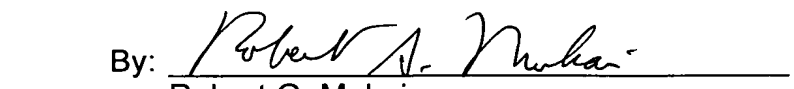
For all of the reasons set forth above, applicants respectfully submit that the claims now of record fully comply with the provisions of 35 U.S.C. § 112 and are patentable over the cited documents, particularly in view of the amendments to claim 1 and the evidence that has been provided in the specification. In view of the patentability of claims 1 and 5, applicants respectfully request rejoinder of method claims 6 and 8 pursuant to the provisions provided in M.P.E.P. § 821.04(b).

Should the Examiner wish to discuss any aspect of the present application, he is invited to contact the undersigned attorney at the number provided below.

Respectfully submitted,

BUCHANAN INGERSOLL PC

Date: March 20, 2006

By: 
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